Warning: The Betz thermal stability additive is a surfactant and will disable the standard DoD and API 1581 filter-separator coalescer elements. These conventional coalescers can become disabled at concentrations as low as four parts per million.

A-6 Thermal Stability Additive.

a. JP-8 with a thermal stability additive is referred to as JP-8+100. The additive improves the thermal stability of JP-8 by approximately 100°F, from 325°F to approximately 425°F. Betz 8Q462 (Shell Aero 101 in Europe) is the brand of thermal stability additive approved for use in Air Force fuels. The +100 additive will be additized at authorized locations at 256 PPM (1,048 ml or 33 oz per 1,000 gallons). This additive must be injected downstream of the fillstand filter separator coalescer elements. Bases utilizing the +100 additive will treat additized fuel as a separate grade. MAJCOMs shall establish procedures to prevent the issue of +100 fuel to non+100 aircraft or the accidental commingling of +100 with non+100 fuel.

b. Only select Air Force aircraft are authorized to use fuel with the +100 additive. Non+100 aircraft (i.e. Navy/Marine Corps, contract carriers, foreign military, or commercial aircraft) will not be issued +100 fuel, except under emergency conditions. The aircraft pilot must justify the emergency on an AFTO Form 148 prior to aircraft servicing. Base fuels personnel will follow the form's distribution instructions within 24 hours of fuel issue.

Warning Coalescer elements must be replaced after contact with +100 additized fuel prior to being returned to aircraft service.

c. Defueled JP-8+100 must be strictly controlled.

(1) One time defuel with absorption media element equipped refueling units is the preferred method. This fuel may be returned to a JP-8+100 program aircraft, used in aerospace ground equipment (AGE), or used in an engine test cell facilities.

(2) If feasible, it may be drained into a bowser. This fuel may be used in AGE or in engine test cell facilities.

(3) Defueled into a coalescer equipped defuel unit, this fuel may be returned to a JP-8+100 program aircraft if the fuel passes for water and solids per Table 5-1 Item 7. Should either of these samples fail, this fuel may be used in AGE, or in engine test cell facilities. Coalescer elements must be replaced after contact with +100 additized fuel prior returning the refueler to aircraft service.

(4) As a last resort, the JP-8+100 may be blended into bulk fuel stocks provided the blend ratio does not exceed one part of JP-8+100 to 100 parts of JP-8. If the fuel passes through a filter separator prior to dilution, these elements must be replaced.

d. The Betz +100 additive can raise the conductivity level in JP-8 by 150 CU at ambient temperature and as much as 300 CU at extreme temperatures. Quality control personnel will strictly monitor CU levels in JP-8+100.

Warning

The Betz thermal stability additive is a surfactant and will disable the standard DoD and API 1581 filter separator coalescer elements. Refueling unit coalescer elements must be replaced with absorption media elements prior to conversion for use with the +100 additive.

e. Currently there is no approved base level test to determine the concentration of +100. Quality Control will be maintained by monitoring the additive injection rate at the injector. The presence, not concentration, can be determined by shaking a fuel sample. The surfactants in +100 will cause the fuel to foam.

f. To convert refueling units to non+100 status, the unit must be drained. No more than fifty gallons of fuel may collectively remain in piping, hoses, and filter separator. After filling, rotate 1,000 gallons through each hose. To convert units to +100, simply fill the unit with JP-8+100. Aircraft are considered off of +100 status after two consecutive refuels with at least 75% of the aircraft fuel load using non+100 fuel.